



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,806	11/26/2003	Charles L. Compton	CCCI0114 PUS	9770

50764 7590 09/06/2006

BROOKS KUSHMAN P.C.
1000 TOWN CENTER
TWENTY-SECOND FLOOR
SOUTHFIELD, MI 48075

EXAMINER

LEE, DAVID J

ART UNIT	PAPER NUMBER
----------	--------------

2613

DATE MAILED: 09/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/723,806

Applicant(s)

COMPTON ET AL.

Examiner

David Lee

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 8, and 15 recite the limitation “the *optical signal* carrying the HFC forward path spectrum, wherein the HFC forward path spectrum *includes a radio frequency (RF) spectrum* carrying the switchable digital data signal” (emphasis added). The limitation seems to suggest that a radio frequency spectrum is somehow “included” in the optical signal via the HFC forward path spectrum. However, it is noted that an optical signal is an electromagnetic wave within the visible and infrared portions of the electromagnetic spectrum, typically on the order of 300,000 GHz, while the radio frequency portion is in the range of 50 Mhz to 1000 MHz. Once an RF signal is modulated onto an optical signal, it is no longer in the radio frequency spectrum (or “includes a radio frequency spectrum”), but instead, the signal is in the infrared or visible portion of the electromagnetic spectrum – hence, “optical” signal. The claim seems to suggest otherwise, rendering the claim indefinite for failing to distinctly claim the subject matter of the instant invention.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 5, 6, 8-10, 12, 13, and 20 are rejected under 35 U.S.C. 102(e) in view of the rejection under 35 U.S.C. 112 as being anticipated by Deng et al. (US Pub. No. 2002/0196491 A1).

Regarding claims 1 and 8, as it is best understood in view of the 112 rejection, Deng teaches an apparatus for use in a hybrid fiber coax (HFC) network to provide the HFC forward path spectrum from the head end to a network fiber node (see fig. 4), the apparatus comprising: a head end modulator (in 102 of fig. 4) directly receiving a switchable digital data signal (from digital XC 106) and internally processing the switchable digital data signal (in 102 of fig. 4) to produce an optical signal that directly drives the network fiber node (transmitted along 108 of fig. 4), the optical signal carrying the HFC forward path spectrum, wherein the HFC forward path spectrum includes a radio frequency (RF) spectrum carrying the switchable data signal (see fig. 4: the optical signals λ_1 - λ_4 are produced using the CWDM lasers which modulate the switchable data signal received from the digital XC 106; it is noted that the signals from the digital XC 106 are electrical signals, which are in the RF spectrum – see paragraph 0026).

Regarding claims 2 and 9, Deng teaches the head end modulator generates an analog optical signal for the network fiber node (along fiber 108 of fig. 4).

Regarding claims 3 and 10, Deng teaches that the head end modulator processes the switchable digital data signal to dynamically allocate bandwidth to different services (the digital data signal from 106 is allocated by wavelength).

Regarding claims 5 and 12, Deng teaches that the switchable digital data signal is received in the form of a 10 GigE signal (fig. 4 – signal received at 10Gb/s).

Regarding claims 6 and 13, Deng teaches that the switchable digital data signal is received as a single digital data signal input (from 106 of fig. 4).

Regarding claim 20, as it is best understood in view of the 112 rejection above, Deng teaches that the RF spectrum includes a plurality of channel slots in the form of frequency ranges (see paragraph 0031).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 14-16, 18, and 19 are rejected under 35 U.S.C. 103(a) in view of the rejection under 35 U.S.C. 112 as being unpatentable over Deng.

Regarding claims 7 and 14, Deng teaches the limitations of claims 1 and 8 but does not expressly disclose that the switchable digital data signal is received as a plurality of digital data signal inputs. However, it would have been obvious to a skilled artisan at the time of invention

to configure the input so as to received the signal from a plurality of inputs in order to allow reception from different networks/locations.

Regarding claim 15, as it is best understood in view of the 112 rejection above, Deng teaches the limitations of claim 1 including the limitation wherein the modulator processes its received switchable digital data signal to dynamically allocate bandwidth to different services to provide an essentially narrow cast approach among the plurality of modulators (the digital data signal from 106 is allocated by wavelength). Deng does not specifically disclose a plurality of modulators to receive the digital data signal and produce the HFC forward path spectrum. However, it is well known in view of admitted prior art that using a plurality of modulators, instead of a single modulator, to transmit a forward path spectrum is well known in the art. It would have been obvious to one of ordinary skill in the art at the time of invention to have a plurality of modulators in the network system of Deng in order to transmit and receive signals to multiple customer premises at the same central office, so as to effectively handle high capacity traffic in a cost efficient manner. This is taken to be admitted prior art because applicant failed to traverse the examiner's assertion of official notice.

Regarding claim 16, Deng teaches the head end modulator generates an analog optical signal for the network fiber node (along fiber 108 of fig. 4).

Regarding claim 18, Deng teaches that the switchable digital data signal is received in the form of a 10 GigE signal (fig. 4 – signal received at 10Gb/s).

Regarding claim 19, Deng teaches that the switchable digital data signal is received as a single digital data signal input (from 106 of fig. 4).

Claims 4, 11, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deng in view of Applicant's prior art.

Regarding claims 4, 11, and 17, Deng teaches the limitations of claims 1, 8, and 15 but does not expressly disclose that the switchable digital data signal is received in the form of a 1GigE signal. However, digital data received by a central office at a 1GigE level is well known in the art. Applicant's prior art discloses that signals at switchable forms such as 1GigE or 10GigE is well known (pg. 1, lines 24-26). It would have been obvious to one of ordinary skill in the art at the time of invention to receive signals in 1GigE in order to make use of its cost-effectiveness and to take advantage of the bandwidth capabilities.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Lee whose telephone number is (571) 272-2220. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 10/723,806
Art Unit: 2613

Page 7

DL



KENNETH VANDERPUYE
SUPERVISORY PATENT EXAMINER